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DECEMBER, 1879.

EVERY ONE will want to do a little decorative work for Christmas and the New Year. Some may not be able to do much, but there are very few so poor or unfavorably situated as not to be able to get a few Ferns, or Evergreens, or red berries with which to adorn table and mantle, and thus give a holiday air to home, and help make a Merry Christmas and a Happy New Year. Beauty will always be found by those who search for it, and happiness is confined to no class or condition.

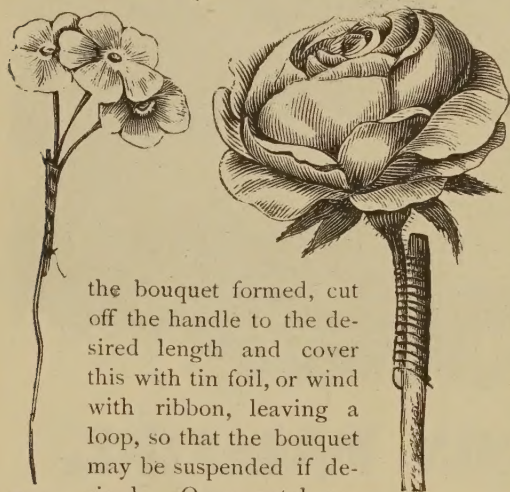
Quite appropriate to the season, we thought, would be some suggestions on the decoration of homes and churches, and the making of ornamental designs and letters, but before making much progress, we remembered that in January and February of this year the subject was pretty well discussed and illustrated, and to those numbers we refer our readers. As we have become interested in it, however, we shall not abandon the topic, especially as several of our correspondents have asked us to tell them the best way to make bouquets, a subject upon which we have not spoken the present year.

BOUQUET MAKING.

Arranging flowers loosely and prettily and naturally in vases and other ornamental receptacles for flowers is a very easy work, requiring only good taste and some knowledge of the harmony of colors. As a rule ladies do this work well, and need no suggestions from us.

The filling of baskets is a little more difficult, because more formal or artificial. First, line the basket with tin foil, or scatter a little *Lycopodium*, or other green material, to form a kind of green lining, and over this put a lining of strong paper. If the basket is not so open as to show the lining, a simple lining of paper will be enough. Then fill the basket with damp saw-dust, rounding it off at the top and covering with damp moss, inserting the stems of the flowers in the moss. If the natural stems are not suitable for this work the flowers can be "stemmed," that is, fastened to sticks, as shown in the engravings. It is well to give an edging or border mainly of green. Very few flowers have stems suitable for nice bouquet work, so it is the custom to "stem" all flowers, that is, give them artificial stems, and the material used for this purpose is broom-brush or wire, to which the flowers are attached with spool-cotton or fine wire. These stiff stems can be made to hold the flowers in any position desired. To keep the flowers from crowding each other, and also to supply moisture, it is usual to wind damp moss around the stem of each flower at its connection with the artificial stem. The central flower, which is usually the largest, must have a stiff, straight stem, as seen in the engraving, for this really forms the backbone of the bouquet, as well as the handle. Fasten the stems of all flowers around this central flower, as in the small engraving of a bou-

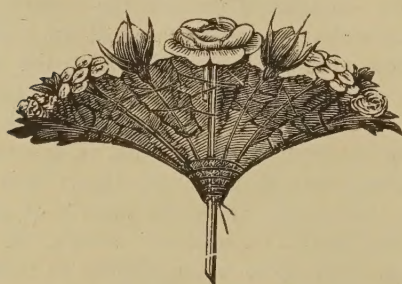
quet, as it would appear divided near the middle, showing the way the flowers are fastened to the main stem, as well as the manner in which they are kept from crowding each other. After the flowers are all properly attached, and



the bouquet formed, cut off the handle to the desired length and cover this with tin foil, or wind with ribbon, leaving a loop, so that the bouquet may be suspended if desired. Ornamental papers, prepared for the purpose, are very pretty, and can be obtained at a small price of most florists. These cover the handle and bottom of the bouquet, and also usually make a quite ornamental border. Our remarks are, of course, designed for hand bouquets, but larger bouquets are made in the same manner, except that they are more pyramidal in form.

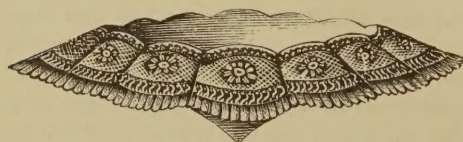
BUTTON-HOLE FLOWERS.

It is not long ago, at least it does not seem



SECTION OF HAND BOUQUET.

long to us, when any gentleman in America who wore a flower in the button-hole of his coat, or any lady who adorned hair or dress with a few flowers, would be thought vain, silly, foppish, etc. Flowers, however, are now worn



BOUQUET PAPER.

on all festive occasions, even in this country, and nowhere are they more prized. In Europe

the practice has been common as long as we can remember.

In the first place, there is the Button-hole bouquet proper, which is composed of a few



BUTTON-HOLE BOUQUET.

very fine flowers tastefully arranged, as shown in our engraving. This must not be confounded with the Button-hole flower, which is simply a single flower, like a Rose-bud, or a Tuberose, with some pretty, sweet-scented leaf for a background, which we have also attempted to illustrate. Both are good. No leaves are more desirable for this purpose than the sweet-scented Geraniums, and we give figures of the best kinds. One or two plants will furnish all the leaves that will be needed.

It will be seen that the button-hole flower is merely attached to the stem of the leaf by a



BUTTON-HOLE FLOWER.

thread or string. This is designed to be inserted in the little bouquet-holder, which is filled with water and attached to coat, dress, or hair by the pin. In this way the flowers will keep fresh for a day or two. The button-hole

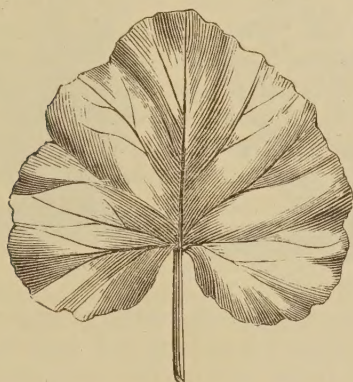
bouquet is arranged differently. The stems of the flowers are covered with a little damp moss or cotton, the whole being surrounded with tin



BALM.

foil, and fastened to the coat or dress with a common pin. Of course, the holder may be used with either, or both may be arranged for tin foil. The bouquet-holder is of glass, of any color desired.

The Balm and Apple-leaved Geraniums, par-



APPLE.

ticularly the latter, are great favorites with every one, and are useful for many ornamental purposes. The very beautiful cut foliage of the Rose and Dr. Livingston Geraniums are sufficiently attractive in form alone to insure general



ROSE.

popularity, but when added to this is their delicate and delightful fragrance, we know we shall

be pardoned for urging every one who cultivates flowers to secure at least one of these plants. All, except the Apple Geranium, grow easily from slips, and all do nicely in the house, and when once secured there will be no necessity for again purchasing during a life-time, for



DR. LIVINGSTON.

in the early autumn slips can be taken off and potted for winter use in the house, and in the early spring slips can be potted, and in three or four weeks they will be sufficiently rooted to transfer to the open ground. The Apple-scented must be grown from seed, or plants may be purchased of the florists.

EVERLASTING FLOWER PLATE.

Where winters are severe and long continued, commencing sometimes pretty fiercely in November, often with heavy snows, the stock of material for holiday decorations is not too abundant nor often easily obtained. Under



such circumstances the everlasting flowers and bright grasses are quite an acquisition, and admirably light up common evergreen wreaths and trimmings. Fortunately these can now be obtained in desirable warm colors of all our

florists. So important do we consider this class of flowers that we have given our readers a colored plate representing a few of the most



ACROCLINIUM ROSEUM.

important, and some time in the future may prepare a plate of Ornamental Grasses. In the little key, which we give to save disfiguring the colored plate with figures, No. 1 is *Acroclinium roseum*, a tender annual that succeeds well if started in boxes or hot-

beds, so as to secure a quick germination of the seeds. The flowers must be picked in the bud, or the first day of opening, or the center will become dark. There are two colors, pink and white. After gathering, tie up in small bunches, by the stems, and hang up in the shade, heads down. This is the way all everlastings should be dried.

Nos. 2 and 5 are different colors of Heli-



HELICHRYSUM.



XERANTHEMUM.

chrysum, a strong-growing annual, that can be easily grown. This must also be cut in the bud, or as soon as the flower expands.

No. 4 is the half-open flower of the Xeranthemum. The Xeranthemums are free-flowering annuals, of neat, compact habit, not more than a foot in height. There are several colors, single and double.

No. 6 is the old Gomphrena, or Globe Amaranth, and is sometimes called English Clover. It is a handsome plant, eighteen inches in height, with plenty of flowers. The best kinds are the white and red. These should not be gathered until the flowers are well formed in the autumn.



GOMPHRENA.

Nos. 7 and 8 show varieties of Statice, which is not exactly an everlasting, but which dries and retains its color very nicely.

Nos. 9 and 10 show the beautiful bell-flowers

of the *Rhodanthe*, the most delicate of all. A little care is necessary to make the seeds germinate. Cut the flowers before they fully expand. The *Rhodanthe* makes an excellent pot plant.

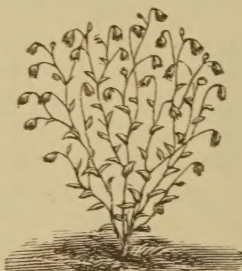
The *Helipterum*, No. 11, is the brightest of all the yellow everlastings. The plant is about twelve inches in height, and bears many clusters of its small, bright flowers. They retain their color well for long years.

Our readers are doubtless acquainted with the little Eternal Flower, No. 12. It is a perennial, grown mostly in France, and in large quantities, and shipped to all parts of the civilized world. The natural color is as shown in the engraving, but they are bleached white, and stained pink, red, purple, &c.

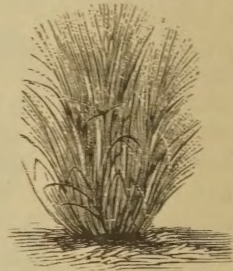
The Hartford Fern, *Lygodium palmatum*,



STATICE.



RHODANTHE.

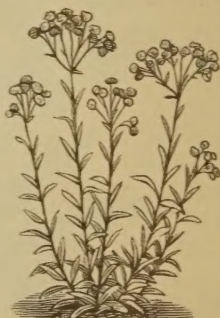


AGROSTIS.

No. 13, is an elegant decorative plant, found in Massachusetts, Connecticut and south to Virginia. It retains both the form and green color of its leaves for months, and even years, if protected from dust. It is kept for sale by most florists.

Several varieties of the smaller grasses are exhibited, and these make up nicely with the everlasting flowers. The larger and finer grasses, like the Pampas and Erianthus, we may endeavor to show at some future time, though it seems almost impossible for an artist to catch their light feathery grace.

No. 14 is the little Shaking Grass, *Briza minor*; 15 is *Bromus briziformis*; 16, *Agrostis nebulosa*; 18, *Briza maxima*. Any of the above can be easily grown in the garden, or had dry of florists.



ETERNAL FLOWER.

The little *Gypsophila* is shown, No. 17, and is a favorite with florists, as it gives a light, lace-like adornment to bouquets, and 19 is a



HELIPTERUM.

GYPSOPHILA.

native Fern, to be found over a large area of country, and in fine condition for winter use. It is called the Holly Fern.

We hope many of our readers will cultivate these pretty and lasting flowers the next season. Those who desire them earlier can obtain a very fair collection of florists, for fifty cents and upwards. If designed for evergreen wreaths or festoons, order bright colors.

A LITTLE OUT-DOOR WORK.

Out-door work is, of course, about over in the north, but still a little may be done, and good results follow that little. We desire, at the last moment, to speak a good word for newly transplanted trees, shrubs and bulbs. The autumn has been unusually dry over a large portion of our country, and experience has taught all observing florists and gardeners that the roots of plants and trees suffer much more by winter frosts when the soil is dry than when containing the usual moisture. We remember one dry winter in which the usually hardy Red Cedars were almost entirely destroyed over a large extent of country, and



BRIZA.

another when our nurserymen found in the spring that millions of Pear trees on Quince roots had been rendered entirely worthless, the roots being black and dead.

The roots of newly planted trees and shrubs are near the surface and consequently exposed to the cold, as well as to all changes of temperature. The next summer they will push their roots down and be in far less danger than the first season's planting. This is the reason why trees that are somewhat tender for a few

years after planting become quite hardy when older; hence, we say they have become acclimated. Our only safety is in covering the earth over and around the roots with some material, coarse manure, straw, leaves and the like, that will modify the severity of the winter, and also aid in preserving an equable temperature. It is well enough, and necessary, to protect the branches of tender Roses and other things with straw, but the protection of the roots is certainly of equal importance. Keep the feet warm, is the advice of all physicians; and the wise horticulturist is equally anxious regarding the feet of his plants. Even in comparatively southern climates much injury often results from sudden and frequent changes of temperature. It is this that makes it somewhat difficult in some sections to grow Tulips and



HOLLY FERN.

other bulbs that do well in a climate that is colder, but the changes less frequent. A protection to newly-planted beds of bulbs is, however, a necessity both north and south, and with it, success is pretty well assured.

Trees in their native state are usually found in masses, where the roots are both shaded from the intense summer sun and protected in a great measure from the severity and changes of winter, for all know how nicely the snow lies in the woods while the roads and fields are bare. We take those trees and shrubs from their native home and place them on our exposed lawns, or even on the sidewalks, jammed in between flagging and curb-stone, without a particle of protection, and wonder why they die. The only surprising thing is that so many live. Nature has a wonderful habit of accommodating itself to circumstances, but cannot perform miracles. In planting trees thought to be a little tender, lighten the soil three or more feet in depth, so as to encourage the growth of roots downward, and provide for the removal of surplus water, for, while a moist soil is best, no stagnant water should be permitted near the roots of trees, except those that grow naturally in a cool, mucky soil.



RURAL NOTES.

MR. VICK:—There is a Locust tree before my window that has been pruned until there is a bare trunk of some fifteen or twenty feet, and I thought, “what a nice place for a creeper, and how lovely that bare pole would look draped with living green.” So last spring I planted several roots of American Ivy, and tied the vines around the trunk of the tree, and I am becoming alarmed at my success, lest they should kill the tree. The first leaves withered and dropped, but new ones started all the length of the vine, which was several feet, and it is creeping up the tree very fast. I do not wish the tree to die, for I love it. I think the Locust, when let alone, is one of our loveliest native trees. There is an airy grace about its delicate foliage that charms me; the lightest zephyr sets its fairy fingers to beckoning, and it is easy to believe a dryad still lives in its leafy bower, invisible to mortal eyes.

The *Ampelopsis quinquefolia* grows wild here. I got my vines in a neighboring field, and every one of them is growing—and how interesting is the growth! The tiny tendrils crawl up walls and trees like some sensate creature.

This is rather a long note, but spare it for the sake of the lovely Locust trees all over the land that are being pruned out of all nature and beauty, with an eye to fence-rails, in some cases, I suspect.

Some of my Sweet Peas did not thrive last spring, the leaves were yellowish and they were several inches behind some others I sowed at the same time. There was some old wall-plaster in the cellar, and I gave them a light top-dressing of it, and in a short time they grew very green and full of blossoms. I never saw a better batch of these butterfly beauties—scarlet, black, and white. But they are not really scarlet, nor yet black, but cherry and purple, or else I must be color-blind. The Scarlet Lychnis is really scarlet, and the Black Pansy is black, and, by the way, it is the only black flower I am acquainted with.

My Canterbury Bells are in bloom for the

second time this summer; I removed the first flowers when faded, and, as no seed was formed, the strength of the plant is expended on a second crop of blossoms. This old-fashioned flower is well worthy of cultivation. I have often wondered at its neglect by amateurs. I seldom see it anywhere except in my own garden, where it is always much admired, and many people ask the name of it, and I tell them it is so old-fashioned a flower that it is really new to most people. My Canterbury Bells took a strange freak this year; out of fourteen plants in one border only three bloomed, but the others are growing vigorously and I expect great things of them next year. I tried to coax them out, but all my blandishments were vain, not a blow was forthcoming. But I am not astonished at the caprice, for *belles* often do have whims. And this particular one did the same thing once before; but it is queer conduct for a biennial, when you come to think of it.—E. A. M.

CULTURE OF THE MAURANDYA.

MR. JAMES VICK:—In looking over the back numbers of the MAGAZINE I notice that some of your correspondents have a good word to say for the Maurandya, and I think that it justly deserves much more praise than has been given it. With your permission, I desire to add a few more words to the items that have already been given. In the first place, I would say that after several years experience with the Maurandya I have found your remarks on page 329, November number of 1878, to be perfectly correct. The remarks alluded to are as follows: “It will do well in the open ground if not exposed to strong winds.” All who contemplate planting the Maurandya will do well to bear this in mind, for, if planted in exposed situations, much disappointment will ensue. I have had plants on trellises over five feet high blown over without injury to the plant. When the Maurandya is grown in exposed places, I have noticed that the extreme tips of the young shoots are generally broken off by strong gusts

of wind; this may injure the plant some, but still there must be some other reason why the plant does not thrive in exposed situations. J. B. W., in the November number for 1878, says that the white variety appears to be more delicate than the purple. Here the white variety grows as rapidly as either the red or the purple. In fact, I can see no difference in the growth of the varieties. As this summer was very dry, I gave my plants a mulch of coarse stable manure, and occasionally a bucket or two of water, and I was amply repaid for this little attention in a profusion of bloom. My method of cultivation is as follows: About the middle of April I trench, or work up the ground where I intend to place my plants, to the depth of two feet, at the same time working into the soil a quantity of well-rotted manure. As soon as all danger of frost is over they can be planted out, taking care to set strong and healthy plants. I look over them occasionally for a week or so after they are planted out to see that they are properly placed, so as to cover the trellis. This must be attended to while the plants are small, for, if neglected, the shoots will be injured or broken by attempting to remove them after they have obtained much growth. After the plants commence to grow rapidly, they will need no further attention, unless it be to remove some of the shoots, so as to keep the plants in shape. The plants can be cut back, taken up and potted in September, and if this is carefully and properly done they will be found to be admirably adapted for the decoration of the greenhouse or window garden, and watering them occasionally with manure water will improve them wonderfully. As basket plants they are not surpassed, but for this purpose strong and healthy young plants should be obtained and placed in the basket by September 1st, so that they can become well established by the time they are wanted for the house. The *Maurandya* can be easily propagated from cuttings of the half-ripened wood, and, if propagated in the early part of September, they can be kept in a flourishing condition by shifting them once or twice during the winter, if necessary. They can also be raised from seed, with a little attention, by observing the following directions: The seed may be sown about April 20th, in a drained pan of light soil, care being taken not to cover it too deep; as the seeds are very small they should be covered slightly with light, sandy soil. Place the pan in a light, warm place, and take care that the plants do not become drawn. As soon as the plants are strong enough to handle, pot off into four-inch pots, using light potting soil; pinch off the tops as soon as the plants are four

inches high; this will cause them to branch freely, and to become stocky. As soon as the weather becomes settled they can be planted out. Of course it is understood that the young plants are to be kept in a warm and light place from the time they are potted until the final planting. I find upon trial that the best and most distinct varieties are *M. Barclayana*, with beautiful, bright-purple flowers; *M. Barclayana rosea*, with rose-colored flowers, and *M. Barclayana alba*, with flowers of a pure white. *M. Emeryana rosea* and *M. albiflora* are said by some to be improvements upon *M. Barclayana rosea* and *alba*. I purchased a packet of each of the former varieties, but when they came in flower I could not observe any difference between them and my old favorites. *M. semperflorens* is said to be a perpetual-flowering variety; my experience with it has not been satisfactory, for, after raising and flowering some twenty plants, I had the satisfaction of having a fine display of *M. Barclayana rosea*—nothing more or less. It may be, however, that my seed was not true to name. *M. antirrhiniflora* is said to be entirely distinct from the other varieties, both in foliage and flower. I have often endeavored to obtain seeds or plants of it, but without success. Can you, or some of your readers, give me some information concerning it? *Maurandya Barclayana* is a native of Mexico, from which country it was introduced in the year 1825.—CHARLES E. P., *Queens, L. I.*

JERUSALEM CHERRY.

I suppose every one is familiar with the old Jerusalem Cherry, with its round, red, cherry-like berries. A good, healthy plant is always a pretty object among a collection of house plants, though I do not prize it as a single plant, nor do I want to see it unless healthy and vigorous, so that its leaves are of a lively green, and its berries of the brightest red. It is of a rather loose habit, and I have not always been able to make it grow in a nice, compact form. I had, last winter, a few plants of a dwarf and very compact habit that had pleased me very much. They came naturally into a good form, and, I think, bore much more fruit than the old kind. Indeed, they were brilliant all the winter. Unfortunately, after obtaining the seed and planting it, the name was lost, so I cannot tell you or your readers, or my friends who inquire, what its name is. Perhaps you may know from the description. I ripened some seed and have a few plants that will do good service this winter. If my experience is of any service to your readers I shall be pleased, and equally well pleased to know the true name of

this variety of Jerusalem Cherry.—MRS. G. W. T.

The plant described by our correspondent is undoubtedly a dwarf variety introduced some three or four years since, and known as *Solanum pseudo-capsicum nanum*. Seed grown in the spring will make good plants for the next winter. They may be kept in pots sunk in the earth in the garden; they will flower the latter part of summer and bear the fruit long in the winter. A brief description and an engraving of this plant will be found in the December number for 1878.

TUBEROSES.

MR. VICK:—I forward you a specimen of my Pearl Tuberose. It is the largest and fullest flower I have ever seen. I obtained the bulbs in the early spring, I think in April, and, as our season seemed to be late, put them in pots



and kept them in a warm place until after the middle of May. For a week or two they seemed to remain perfectly dormant, or at least made no growth. After that signs of growth appeared, and the warmer I kept them the more rapid seemed to be the growth. In May I planted them in the open ground, and in August the first flower appeared. The height was from three to four feet, and the flowers were almost in clusters for a foot from the top. Indeed, they seemed crowded too close together, and were the largest I ever saw. All but two out of thirteen flowered, and these two I took up in September and removed to the house. One did not seem to be injured, but went right on flowering. The other does not do well, and I think I must have injured it in removing, or it was injured before. The ants troubled the bed, and putting kerosene oil on it to drive them away I may have harmed the bulb or roots. I thought that my experience might be useful and encouraging to some of your read-

ers, for I am not very favorably situated for tender plants, as I reside in Minnesota.—EMMA J. S.

The specimen sent was very good indeed, measuring nearly two inches across. The engraving, though not made from the specimens sent, is a very good representation, both in size and general appearance. The course pursued by our correspondent is the very best for a cold climate with short summers. The Tuberose is a native of a warm climate, and a little help in the way described is beneficial.

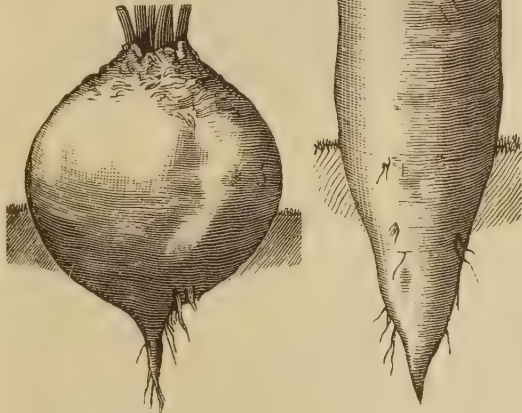
WATER PLANTS IN THE GARDEN.

The article on Water Sites and Water Plants in the July number of the MAGAZINE pleased me more than I can express. Water plants are so novel and beautiful, that lovers of plants should cultivate them. It can easily be done. I dug a basin in the ground, near my well, two feet deep, and cemented it with water-lime, putting stones around the edges; in the background I built the stones up higher than the level ground, and planted them with rock plants. The basin I partly filled with garden soil, and then went to the ponds, swamps and woods to get plants to place in and around the basin. In the middle I planted *Nymphaea odorata*, next, *Nuphar advena*, and then around the sloping sides of the basin, *Sagittaria variabilis*, *Typha latifolia*; a reed, name unknown to me; *Zizania aquatica*, or Wild Rice, which is a good, reed-like plant, growing four to five feet high, and *Peltandra Virginica*, that has beautiful glossy leaves, resembling a Calla. Around the edges of the basin I planted *Acorus calamus*, *Iris versicolor*, *Cyperus alternifolius*, and a Calla. The ground surrounding the basin was always flooded with water when the basin was filled, and in this ground I planted a Caladium, Cannas, *Iris Germanica*, Tigridias, Hemerocallis, and Agapanthus, *Commelyna caelestis*, and some Gladiolus bulbs, also *Lobelia Cardinalis*; around the outside margin, some Fuchsias and other plants. In the background, near a fence, I had Elderberry shrubs, *Lilium Canadense*, *Lilium superbum*, *Arum dracunculus*, and plants from the woods, such as Ferns, *Polygonatum bifolium*, *Smilacina racemosa*, *Impatiens pallida* and *fulva*, Aquilegia and others. All the plants were grouped to produce the best effect. At the start I filled the basin by pumping water into it from the well; this season I have water from the water works, and supply it from a hose, and keep fish in it. Care must be taken when getting plants from a pond not to bring water snails along, as they multiply fast and feed on the leaves of the plants. Those persons who cannot get the wild plants for such a planting as above, and can afford to purchase them, may find numerous plants described in

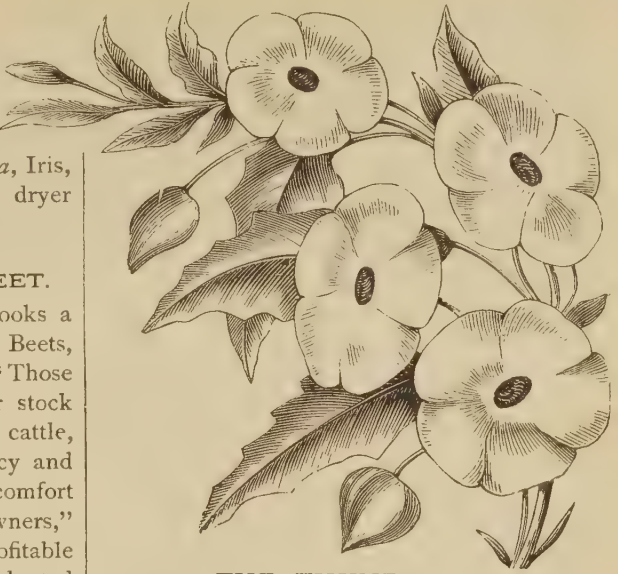
the catalogues that are excellent for the purpose, such, for instance, as *Nymphaea odorata*, Caladium, Canna, Pampas Grass, Erianthus and others of the Ornamental Grasses; Tigridia, *Vallota purpurea*, Gladiolus, Agapanthus, *Aspidistra lurida*, Iris, Funkia, Farfugium and Tritoma on dryer ground.—A. W. E., Cleveland, O.

THE MANGEL WURTZEL BEET.

MR. VICK:—Seeing in one of your books a recommendation of Mangels, or Cattle Beets, in somewhat strange language, like this, "Those who have never tried the Mangels for stock have yet to learn of their great value for cattle, both for milk and meat. They are juicy and refreshing, and add to the health and comfort of the animals and the profit of the owners," I had no objection to an agreeable and profitable surprise, so I obtained some seed and planted them, and, though our summer has been unusually dry, and, I think, not quite so favorable to the Beets as usual, I had a crop that it was a pleasure to look upon—two acres, one of them Long Red, and the other of the Yellow Globe. These large Beets stood up out of the ground in regular rows, like regiments of soldiers on parade. How in the world, with so little roots and so much out of ground, sufficient sustenance is obtained for so large a growth, I cannot imagine. The



gathering, too, is so easy—just give them a kick and over they topple. I don't know yet how many pounds or bushels I grew to the acre, but I weighed one Yellow Globe and it reached twenty pounds, and one Long Red, thirty pounds. I observe, too, that all animals relish them very much. I believe they are eager for them as boys for apples. I don't know as I pursued the best plan of cultivation, but I sowed in drills, about five pounds to the acre, in a rich, mellow soil.—ROSCOE.



THE THUNBERGIA.

If there is any business in the world calculated to teach forethought, it seems to me it is gardening. Without care and thought in the spring there are no summer flowers. This seems to be well understood, but people do not so well know that by a little forethought in the spring and summer they can secure a good many plants for winter-flowering in the house.

I had some nice Thunbergia plants in the spring, and thought that two or three would be quite an addition to my winter plants, so I put three in pots and kept them in good shape all the summer, by a few sticks and a little pinching off of the tops of strong, straggling branches. Fearing a frost the latter part of September I took them up and removed them to the house. There was no fire in the room until a cold spell in October. The change from the garden to the house did not seem to affect them, and I think the pinching caused them to grow more compact and strong and to flower more abundantly, for I never saw such clusters of flowers as I have now, early in November. I send you a small branch, done up in moss, so that you may see how abundant are the flowers. I forgot to say that I made holes and sunk the pots about two inches below the surface of the soil, and then covered them all up, so that they looked like the other plants growing in the garden. Perhaps my process may induce others to try this plan another season.—A MICHIGAN AMATEUR.

DON'T be too anxious to rake every leaf off the lawn. It is nature's protection, and does not look at all untidy. Then what a top-dressing of manure they afford. Above all things, don't rake off the leaves and cover your lawn with stable manure, making the place look like a barn yard.

FLORA OF COLORADO.

Crystal Lake, a beautiful sheet of water, situated about four miles from Lake City, at an altitude of 11,500 feet, is a favorite resort for the study of the flora of San Juan. It is located at the base of Crystal Peak, just at the timber line, in a basin whose margin is clothed with stately Spruces, and beyond which, on one side, rise high bluffs of trachyte, from which a most beautiful view of the surrounding system of mountains can be obtained, while, in the opposite direction, the surface pitches rapidly into the valley of the Gunnison. These beautiful views make this lake a delightful place of resort. Here we find the *Polemonium confertum*, with its most beautiful and fragrant flowers growing in abundance, as well as the less interesting *P. humile*; not far from the lake, on a grassy slope, there is a natural bed of *Ranunculus Cauleyi*, a new species, first obtained in a determinable condition by myself, and named after Lieutenant MCCAULEY, who collected fragments of it previously. This is one of the most showy of the genus, having large yellow flowers, the calyx being thickly clothed on the back with hairs of a rich brown color.

In the crevices of the rocks we find several beautiful species growing, with their roots almost inextricably fixed in the fissures, viz: *Smelowskia calycina*, its dense heads of flowers of all shades, from purple to white; also *Hesperis Pollarsii*, very fragrant; various species of Phlox, Arenaria, Silene, &c. In wet places the *Polygonum viviparum*, with bulblets replacing the flowers in part; also, *P. oblongifolium*, a form of the European *P. bistorta*; *Delphinium Menziesii*, Gentians, and many others are found.

On the dry slopes one is attracted by the large flowers of the *Aquilegia cœrulea*, and the modest, unassuming habit of the pretty *Lloydia serotina*, various Pentstemons, *Actinella grandiflora*, with its large heads and woolly involucre, &c. The number of species growing here are by far too numerous to mention. I have noticed only a few of the most conspicuous or interesting.

By attaining a higher altitude other very interesting things may be found. Ascending Henson creek canyon to an altitude of from 12,000 to 14,000 feet, may be obtained a number of species of Saxifrage, viz: *S. cernua*, *S. adscendens*, *S. Hirculus*, *S. flagellaris*, *S. bronchialis*, *S. punctata*, &c., also the pretty *Mitella pentandra*, and *Parnassia fimbriata*. The large-flowered and fragrant *Primula Parryi* grows in abundance, and one occasionally meets with the interesting *Claytonia arctica*.

At lower altitudes the flora is largely made

up of species of the order *Compositæ*, for the most part lacking in beauty, but of interest to the botanist. At this time, October 17th, the mountains are covered with snow, the higher passes impassable, and vegetation has assumed its winter rest, but the plants obtained from your greenhouse are growing and will continue the summer, in the house at least, through our long and dreary winter.—F. N. P., *Lake City, Colo.*

NEW LETTUCE.

MR. EDITOR:—I am a particular lover of a good salad, not a compound of Celery and chicken, and a good many other things—a kind of miscellaneous hash—but a Lettuce salad; that I need not tell the ladies how to make, and I merely want to talk about the Lettuce. Every one, I suppose, knows that in a moist, cool climate Lettuce remains good all the summer, while with us, as soon as summer sets in the Lettuce gets tough and soon runs to seed. To get kinds that would keep good in hot weather has been my object, and therefore I have kept trying new kinds, and wish to give your readers the benefit of my experience. The very best I



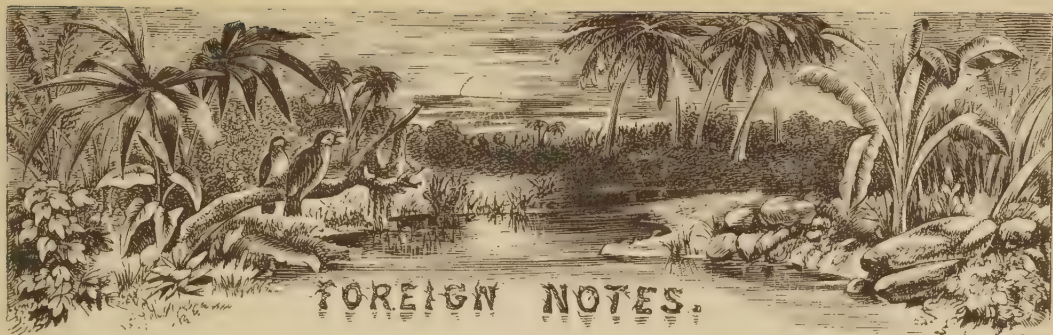
CUT-LEAVED LETTUCE.

have found, I think, all things considered, is the New Premium Cabbage; it is large and solid, and keeps growing all through the summer, and if a little water is used and the place is somewhat shaded, I think it is just as good in August as in May or June. Indeed, it will not go to seed at all without its growth is checked by transplanting. All the Year Round is also a good, long grower, but smaller than the Premium Cabbage.

There are two curious cut-leaved sorts that are desirable, for they are very pretty as well as good, and quite the thing for garnishing.

The Lace-Leaved forms a flat head, with the edges of the leaves fringed as if with lace.

The Cut-Leaved has a large, loose head, the leaves being cut almost like an Oak leaf. Both grow good, and are tender all summer.—J. H. T.



SWEET PEAS IN POTS.

The English people have taken to the cultivation of the Sweet Peas in pots. The climate of Great Britain is more favorable to the production of fine specimens of the Sweet Pea in open ground than our own, but apparently prizing it highly they desire it early, and so are not satisfied without giving it pot-culture. Sweet Peas are sowed in pots late in autumn and wintered in a frame, or a cool place in the greenhouse, brought forward early in spring, and bloom is thus secured much earlier than in the open ground. Eight or ten seeds are enough for an eight-inch pot, and these had better be of mixed sorts, so as to have as much variety as possible. A correspondent of the *Garden* says: "The finest Sweet Peas in pots that have yet come to my notice were sown very early in the year in eight-inch pots, and, when grown to the size when more space was required, they were shifted on into thirteen-inch pots, and had stakes about five-feet high placed round them for support. As soon as the leading shoots pushed outside the stakes the points were nipped out, and it was this pinching, with the copious supplies of liquid manure applied to them, that induced them to grow so strong and produce a thicket of flowers. When Sweet Peas are well cut back during summer, several shoots will spring from the point where the one shoot was cut from, almost causing the plants to assume a somewhat perennial character, and if well supplied with water, with an occasional dose of diluted liquid manure, they are less inclined to produce seed-pods, and consequently there is nothing to exhaust them or check flowering until the cold autumn nights come. By the robust growth and abundance of flowers they produce this season, it is evident that they are moisture-loving subjects."

BAD SEASON FOR FRUIT.—The French authorities say that the grapes have not ripened in Anjou, but were green and hard in October, and were worse farther north. Pears are very inferior.

PLEASURES OF THE GARDEN.

A writer in the London *Spectator* discourses in a pleasant and appreciative manner about gardens, and declares that "to love a garden truly is to care for each separate flower, and this cannot be done when the beds are filled with plants that every succeeding spring brings to life merely to be killed the following winter. The comparatively new plan of bedding-out does not even share in the interest of annuals. An annual is a flower that attains in the course of nature its full growth in the given year, and when this is accomplished we are willing enough it should die in giving life to the future seed. But it is different with flowers like Pelargoniums.

"In the garden of the true lover of flowers will be found the old-fashioned flowers, with the quaint names that poets loved to give them. Bright flowering shrubs and sweet-scented Lilies abound there. There must be the love of gardening itself, the actual personal tending of the plants and borders, before the highest delight in a garden is truly attained. Then will each day of sunshine or rain be appreciated at its real value."

VISITORS TO THE KEW GARDENS

The number of visitors at the Kew Gardens, in the suburbs of London, is very large. On April 22d, of this year, the number of visitors was 46,201, and on June 10, 56,715. This garden is supported by the government, is extensive and well kept, abounding in lawns, carpet beds, herbaceous plants, Palm and Fern houses, &c. With all this large crowd nothing is injured. These thousands of people not only like to see the flowers in the Royal Garden, but like to carry a few to enliven their city homes. So in the neighborhood of the Kew Gardens are many little gardens where the coarser flowers are grown in great quantities, and these are made up into bouquets, not very artistically sometimes, but yet pretty, and sold to boys and others, at from five to ten cents each, who sell them to visitors at the railroad station and land-

ing place for about double these prices. A glorious holiday for London people must be a visit to these gardens, as we thought after only a week's stay in the great city.

PRICKLY COMFREY.

The London *Gardeners' Chronicle* thus speaks of Prickly Comfrey: "Prickly Comfrey, with, it must be confessed, little judgment, has been tried in a variety of countries where the climate is wholly unsuited to its habit of growth. The result has been attended with a good deal of disappointment. In England it has been found very useful for winter fodder, as it forms large tufts of root-leaves which start into growth early in the year, and bear several cuttings. It is greedily eaten by animals which refuse ordinary Comfrey, the habit and appearance of which is not very dissimilar."

It was puffed in this country for a year or two, and is now among the things that are past. We did not try it dry, but could find no animal that would eat it green.

A SMALL THEFT AND A HARD SENTENCE.

The *Weekly News*, of Plymouth, England, states that a magistrate of that town recently sentenced a gardener to pay a fine of \$10 or be imprisoned for one month, for taking from the trees of his employer five peaches. According to the evidence given by his employer he had been in his service for six years, and was an industrious, clever, hard-working man. It was the first occasion that he had had to find fault with him. This seems to have been an outrage on justice, and so some of the inhabitants of the neighborhood thought, for they immediately started a subscription for the gardener.

RIDDANCE OF VERMIN AND INSECTS.

A French journal states that chloride of lime scattered about where rats and mice frequent will cause them to desert the spot. A solution of it brushed over plants will effectually protect them from insects. If scattered over ground infested with grubs it will free it from them entirely. Bunches of cotton or tow smeared with a mixture of chloride of lime and hog's lard, and tied about in different parts of a tree, will guard it against the attacks of insects, slugs, grubs, etc., and drive away those already in possession.

THE EDELWEISS FLOWERED IN ENGLAND.—

The celebrated Edelweiss of the Alps, known to all Alpine tourists, has recently flowered in England, in a rock garden, and the bloom was four inches in diameter—larger than ever seen in its native mountains.

GLADIOLI IN ROSE BEDS.

Single bulbs of Gladioli planted in Rose beds in spring, in the open spaces, have borne three or four large spikes of fine flowers, and have made the beds look gay at a time when they would otherwise have been dull and comparatively bare. As the leaves of Gladioli are erect and occupy but little space, I find them to be one of the best subjects for introducing among Roses, as their many-colored spikes of bloom are highly ornamental; they also look extremely well when mingling with the large-leaved plants employed for producing a sub-tropical effect.—J. GROOM, in *Garden*.

GLADIOLUS AND LILIES FOR FLORAL DECORATION.—At the recent visit of H. R. H., Prince LEOPOLD, to Sheffield, to open a new college, the floral decorations were very grand, and were mainly composed of grand spikes of Gladioli, Lilies, and Phlox, proving, as the *Garden* says, the great value of these flowers for autumn decorations.

SEED CROP FAILURES.—To add to the other adversities of the season many varieties of seeds have almost entirely failed in Europe. Among the number, the Seed Trade Association give, among the almost total failures, Wrinkled Peas, Cauliflower, Carrot, Cucumber, Leek, Lettuce, Onion, Mangle Wurtzel Beets and Turnips.

AMERICAN APPLES IN ENGLAND.—From late English journals we learn that large consignments of American apples reached Covent Garden and other British markets the latter part of October and brought good prices. One barrel of Ribston Pippins is reported to have sold for three pounds, or nearly fifteen dollars.

UTILIZING UNRIPE GRAPES.—The berries are placed with a little water in a warm oven, not too hot, and afterwards strained. The juice is then boiled down with the sugar and forms a fine, transparent jelly. It was exhibited before the Royal Horticultural Society of England, and pronounced of excellent flavor.

ONIONS IN ENGLAND.—MR. GLADSTONE, in a recent address before a Horticultural Society, stated that the Onions imported into England every year cost over two million dollars, and urged that more attention should be paid to this crop.

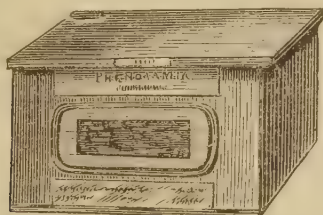
FIELDERKRAUT CABBAGE.—F. SOUES, of Clinton, British Columbia, writes, "the Fielderkraut Cabbage has done better, and seems to be better adapted to our climate than any other sort I have tried."



PLEASANT GOSSIP.

COLLEGE HERBARIUMS.

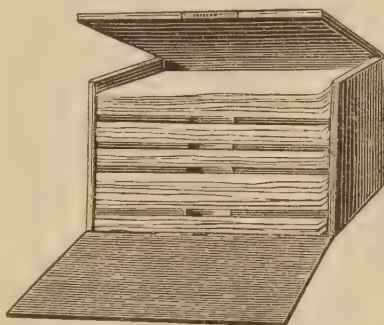
The tendency of the present age to scientific research and to the prosecution of the elements of scientific studies in all schools of secular education, but especially in academies and colleges, leads also to the formation of museums of natural history. Many of our universities and colleges have at least made a beginning in such collections, but a great work in this way is yet to be done. The leader in this country, in the collection and preparation of material for this purpose in nearly every department of natural science, is Prof. HENRY A. WARD, of this city. Prof. WARD is well known, not only in scientific circles, but by the general public, on account of his connection with the University of Rochester, and far better for the many beautiful specimens of his skill in his favorite pursuit. He has sent out into many parts of the country handsome cabinets of mineralogy and geology; zoological cabinets, consisting of stuffed animals, birds, fishes, reptiles, &c., and preserved insects; skeletons of almost every known kind, casts and life-figures of extinct animals, by which animal-forms long since passed out of existence are now placed before our view. Although Prof. W. has for many years been engaged in the manner described, he has never until recently touched botany, that particular branch of science which, as horticulturists,



SPECIMEN CASE CLOSED.

is especially interesting to us; but his long experience in kindred operations, and his business connections with all parts of the world, have made it possible for him to accomplish in this direction what would have been an herculean effort for one of ordinary facilities.

Through the munificence of the late LEWIS BROOKS, of this city, towards the Washington and Lee University, of Lexington, Va., extensive cabinets of natural history were prepared for that institution and placed in their buildings about two years since. Among them was a botanical cabinet of about 7,000 specimens, formed from the herbarium of Dr. CH. MUENCH,



SPECIMEN CASE OPEN.

of Basle, Switzerland. This cabinet is one of great value and beauty, and the specimens range through the whole vegetable kingdom.

Similar to this cabinet, but much greater in extent, is one that has recently been placed in position in the University of Virginia, being a part of what is called the Brooks Natural History Museum of the University of Virginia. It is also the gift of the same generous patron of science, and has been collected and prepared by Prof. WARD at great expense.

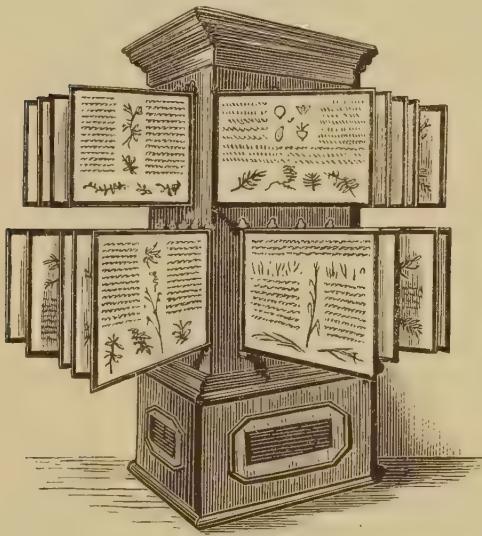
Believing that many of our readers may be interested to learn something about this extensive collection of dried specimen plants, and to know how they have been prepared, mounted and arranged, we will briefly describe it. The herbarium, or botanical cabinet, has two principal divisions, one of which consists of European, and the other of American plants. The European plants, about 7,000 in number, are from the herbarium of Dr. MUENCH, of Basle, Switzerland, and of Dr. A. CRAUSE, of Stuttgart, Prussia. These plants are contained in sixty-six cases.

The American plants are drawn by means of

purchase and exchange from the collections of all the principal botanists of this country, and constitute an herbarium of great richness. It includes a large portion of the flora of the West Indies in a collection of Cuban plants by CHARLES WRIGHT, a general collection from the island of St. Thomas, and Fendler's Ferns of Trinidad.

Besides what has been named above, there is a collection of several hundred Australian plants, being some of those that are especially typical of the flora of that island-continent. There is, also, a similar collection of Syrian plants.

The American specimens number between seven and eight thousand. Each specimen is placed upon a sheet of card board eleven by



SERIES OF BOTANICAL CHARTS.

fourteen inches in size, and fastened to it by means of little straps of white, gummed paper. A neat label pasted at the lower right hand corner gives the name of the natural order to which the specimen belongs, its generic and specific name, with the authority for the same, and its locality. To prevent the depredation of insects in the herbarium, all the specimens have been brushed over with corrosive sublimate dissolved in alcohol. Each mounted specimen has a cover case of a sheet of paper folded once; the card-board is slipped into this sheet and the specimen is secure from harm. The different species of the same genus are placed together, and the genera are separated from each other by a card-board made from pulp of Basswood. All the specimens in one natural order are placed on a shelf in a case, as shown in our illustration, or, if the order is a large one, it is separated into tribes. Labels placed on the edges of the shelves indicate the

orders and the tribes. The names of the orders contained in each case are on the outside on a large label at the lower part of the face of the case; while above it is another label showing the great class or division to which they belong. The cases are sixteen inches long and twelve inches wide and eleven inches high, outside measurement; they are made in the best manner, of black walnut, with a panel in front of bird's-eye maple. The peculiar construction of these cases is shown by the engravings; the lid can be raised and turned back, and at the same time the front of the case dropped down, thus allowing perfect access to it. The shelves are adjustable, resting upon narrow cleats that are held in position in ratchet strips fastened upright on each side of the ends, after the manner of a library case. It will be seen that the case fitted up in this way can be rearranged with the greatest facility, and we know of no device of the kind more perfect and elegant. The great advantage in having a collection of plants for educational purposes arranged in small cases, is that a case can be easily removed and taken to the lecture room when desired; and there are also other advantages.

Besides the specimen plants there are the celebrated Parisian botanical models in *papier-mache*; these are models of flowers on a large scale—a Pea-flower, for instance, nine inches in length, and others on a similar scale, so that they can be distinctly seen from any part of the lecture room. These model flowers are made so that they may be dissected, each part being separable from the others, thus clearly illustrating their construction.

The tropical fruits are represented in beautiful wax models.

One of the most interesting parts of the apparatus is a series of botanical charts issued by the British government. These are seventy in number, and each one indicates the distinctive features of one or more of the natural orders by descriptions and engravings, and also by actual specimens of typical plants. The charts are all framed and glazed, and elegantly mounted on two triangular standards, as shown in our illustration, and these, when set back to back, form a square.

There are many specimens of the native woods of this country, one hundred specimens of European woods, Tree-Fern roots and trunks from Trinidad, seeds from the South American forests, and many curiosities of the vegetable kingdom.

The collection of Ferns is wonderfully full and the specimens of Fungi and other Cryptogamic plants are extremely valuable. Professor WARD has been materially assisted in making

the collection of American plants by Mr. A. H. CURTIS, of Jacksonville, Fla.

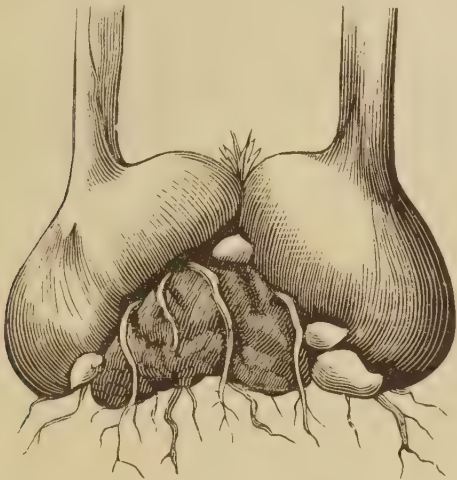
This large cabinet is one of which any educational institution might well be proud, and we believe will greatly enhance the future usefulness of the University of Virginia.

THE GLADIOLUS.

MR. JAMES VICK:—I have had flowers previous to this year, but have not been so far advanced. I had a bunch of Canna bulbs presented to me in the spring; planted them together. There are ten large shoots, the largest being six feet high, to the top of the spike of flowers, seven and one-half feet. Has been in bloom all summer. I have a very pretty stalk of Ricinus, do not know the variety, which is over twelve feet high.

Seeing that you have a Pleasant Gossip department, you will oblige me very much by answering a few questions.

1. I had a few bulbs of Gladioli last year for the first time. On taking them up I found that each old one had one or two young ones attached. I planted them all



this year. The old ones flowered. I took them up a week ago, and the young bulb which I had planted seemed to have died away and two new ones of uniform size were in its place. Am I right in my conjecture? Do the old-bulbs continue to bloom each year? In what length of time do the young ones bloom?

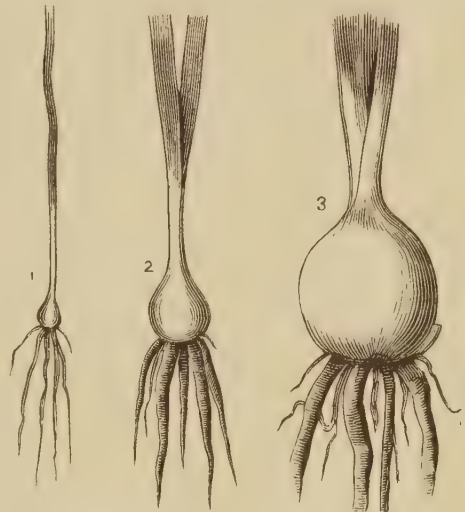
2. I took about forty pots of summer plants into the house a few days since. There is a stove in the next room. The door between is open part of the time. They were in splendid condition before I took them into the house. They get the morning sun, but the leaves are dropping from my Coleus, and also from my Salvia. Can you explain the cause, or give me any hints as to the best mode of keeping them?—MRS. M. H. S.,

MR. VICK:—Here is my experience in Gladiolus culture for the present year. I planted in May and June twenty-eight bulbs, partly from your house and partly my own raising. Every bulb produced fine flowers. This month on taking up the bulbs I found ninety-four fine, large ones, two producing ten (five each), four producing four each, and the rest three, two and one each. Isn't that a fine growth? I have little time to spare from my work, and consequently my little flower garden is almost self-made. The soil is far from rich, but weeds are not allowed and water is furnished in abundance. Some of my neighbors, with more time and money at command, are not so successful. My Gladiolus seem to be true members of the *crescite et multi-*

plicamini family. My Roses are perpetual bloomers, and my Caladiums are quite fine—shade-trees in proportions. My children call the leaves "umbrellas."—F. M. D., Washington, D. C.

MR. VICK:—How long will it take to grow flowering bulbs of Gladioli from the little bulbs that grow at the base of the large ones, and how long from seed? Is there any difficulty in getting either to grow? I ask because I have not been successful, or, perhaps, did not know what results to expect.—AMATEUR GROWER.

The Gladiolus is one of the most beautiful, and the most easily cultivated of all our summer bulbs. No one need fail with the Gladiolus in this country. There is a great difference in the increase of the different varieties. Some give four or five new bulbs every season; others, two; and still others, only one; so with the latter no increase is made except by the little bulblets that are formed at the base of the large bulbs. When the bulb is planted it im-



mediately commences forming one or more new bulbs, and as these increase in size the old one dries up gradually, and in the autumn nothing is left but a dried-up corky substance. These young bulbs produce the flowers. Our engraving, which was made from a specimen taken from our grounds for the purpose, shows the new and the old bulbs, the flowering-stems being cut off. After being dried in this way for a few days, we remove the old bulb and store the new ones away for spring planting. What we call a bulb is not a true bulb, but a *corm*, being solid, while true bulbs are in scales, like Lilies.

The little bulblets that are seen formed at the base of the new bulbs are called, by florists, spawn. They can be removed easily after the bulb dries a little, and, if planted, will make flowering bulbs in from two to four years, according to size and variety. Flowering bulbs are obtained just as soon from seed, but, in planting the bulblets, we obtain the same variety

from which the little bulb was taken, which is not the case with bulbs produced from seed.

Sow *Gladiolus* seed in a bed of fine earth, and keep the soil moist by watering in dry weather. The bed must be partially shaded during the heat of summer. It is well to make a frame of boards around the bed, about a foot in height, and during summer place a few boards across to furnish about half-shade, all to be removed in September. The bed, if it does well, will look like one of coarse Grass. In the autumn take up the little bulbs, dry them for some days, remove the tops and store them away where they will not freeze. They will be very small when taken up, about like figures 1 and 2. In the spring plant these bulbs in drills, somewhat as garden Peas are sown, and the second autumn they will be like figure 3. The third summer they may be planted in rows four or five inches apart. Some will produce flowers, while others will require another year.

Plants desired for winter-flowering should be taken from the garden before the nights become cold, and removed to the house before a fire is needed, or they will lose their leaves.

ALGA ON LAWN.

MR. JAMES VICK:—Please inform me the name, origin, and nature, and means of preventing growth of a very offensive-smelling and repulsive-looking fungus which has infested my lawn. A hollow, tubular, white stem an inch in diameter, topped by a pointed ruffle of dark brown color. It appears to grow from a sack of gelatinous substance just below the turf. It looks and smells as if it ought to be poisonous.—KATE L. T., Andover, Mass.

From the description, we judge there is little doubt that this invader of the lawn is a species of *Nostoc*, probably *N. commune*, an alga that grows on moist ground. One species of *Nostoc* is, in China, prepared by drying, and is then sold to be used in soups. As this one, found on the lawn, grows only in connection with fresh water, we think it probable that a dressing of salt would destroy it for the time being, although it might not prevent the recurrence of its growth in other seasons, when the effect of the salt is spent. We surmise that the lawn in question is not as dry as it well might be, and that the effectual remedy will be to underdrain it.

TREATMENT OF POT-PLANTS FOR WINTER.

MR. VICK:—Please inform me through your MAGAZINE which is the best time to change the earth in the pots of house-plants that are in the garden during the summer, and that I wish for winter-blooming.—M. F. D. Bridgewater, N. S.

Plants that have been plunged in the garden and are intended for winter-blooming should remain in the pots where they have been grown, and the soil need not be renewed unless it is

for a very slight depth, for the purpose of giving a top-dressing of fresh, rich soil; the roots should not be disturbed. Any lack of nutriment at blooming-time may be supplied by liquid manure.

WATER LEAF—A BED OF ASTERS.

Last April we received from MRS. W. E. C., Coldwater, Michigan, a plant that she desired to learn the name of. In a note accompanying the plant she wrote as follows:

"We found it last spring when out in the woods, and the beauty of the leaf attracted me to it; we took it up and it bloomed continually for several months. It had lavender-colored blossoms so delicate and pretty every one admired it; but no one knew what it was. We found it growing at the foot of a Black Walnut stump, and among rotted wood of a fallen tree. I send it to you in earth I found it growing in. I also enclose you some of the seeds of the plant that I saved from mine last year. I would be glad to hear from you in reference to this plant."

The plant was potted and reared in our office window. It came into bloom finely, and we found it to be the Water Leaf, *Hydrophyllum Virginicum*, a plant growing in shady places in many parts of the country. It is very pretty, but the *Phacelia*, which very much resembles it, is far better and worthier of cultivation; for bouquets it is especially desirable. The foliage of *Hydrophyllum Virginicum* is admirable; the leaves are deeply pinnatifid, giving the plant a rare appearance.

Mrs. C. has lately informed us of a bed of Asters she has raised this summer, consisting of ninety-four plants. One of the plants produced eighty-five blossoms, and the whole bed 3,900 flowers, in twenty-three distinct colors and shades. There was an average of over forty-one blossoms to each plant in the bed. We doubt if there is any better report to be made in Aster cultivation the past summer.

PAMPAS GRASS AND *ERIANTHUS RAVENNAE*.

MR. VICK:—I would like to have a Pampas root, but am informed that it will not bear any plumes here. Please tell me what you think about it. If the *Erianthus Ravennæ* will be better I shall want that.—M. J. C., Paris, Ont.

The Pampas Grass, *Gynerium argenteum*, is scarcely hardy at this place; by careful protection it may sometimes be wintered over, and in this case it will produce its plumes, but they are inferior, and not satisfactory to those accustomed to see the fine specimens brought from California. Very fair plumes are raised in the south. *Erianthus Ravennæ* will succeed well in the western part of Ontario.

THE TRITOMA.

I have a beautiful plant of the Tritoma. It is now, the 10th of November, in bloom, bearing eight of its brilliant spikes of red and yellow. I think I have not seen anything in your MAGAZINE about this plant. All through the hot weather it made slow growth, but with the fall rains it has developed wonderfully, and is now the most brilliant plant I have in the garden, indeed, it is almost the only flower left. Is it safe for me to leave

it in the garden all the winter? I do not wish to lose it. What can I do with it to save it for next summer?—

E. B., Clarion Co., Pa.



The Tritoma is almost hardy, and with a little covering of straw, leaves, or evergreen boughs, will pass through a northern winter generally uninjured. They do, however, suffer in some winters. The safest way is to remove them to a pit, say eighteen inches or two feet in depth, partially covering this with boards and a little straw. Or they may be placed in a cool cellar, the roots covered with earth, or planted in a tub. It is necessary to give some light. The



Tritoma, as stated by our correspondent, is the gayest of autumn flowers. It loves moisture, and a good soaking occasionally will help the

growth very much in dry weather and hasten flowering. On the edge of a pond or in a moist place the Tritoma is wonderfully at home, and will grow much more rapidly and flower several weeks earlier and more abundantly than in a dry soil. The spikes of flowers stand up fully four feet, and the long, slender leaves half that space.

ACHIMENES FROM SEED.

Mrs. S. S. P., Upper Sandusky, Ohio, enquires:

1. How to raise Achimenes from seed.
2. How to treat Fancy Caladiums, *Oxalis Ortgiesi*, and *Amaryllis Johnsonii* during winter.
3. How to care for the Ivy-leaved Geranium, L'Elegante, in winter.
4. How to raise *Akebia quinata* from cuttings.

The Achimenes may be raised from seed by sowing in the spring in a seed pan filled with a fine sandy soil, and placing the pan where the night temperature will be maintained as high as 65°. The soil must be kept gently moist all the time and never allowed to become dry. As soon as the young plants have sufficient strength, they may be potted off, either singly into three-inch pots, or three or four of them into a five or six inch pot. After this, in order to obtain vigorous plants, it is necessary to keep a steady temperature of 65° to 75°; the air and soil must be kept constantly moist, and the leaves frequently syringed. The plants should be kept near the glass, but require to be carefully shaded from the strong rays of the sun. When the plants have filled their pots with roots they should have a shift into a larger size and then kept on with the same treatment described until the flowering period arrives and passes.

Tubers of the Fancy Caladium may be best kept over winter by allowing them to remain in the soil where they have grown, and kept at a temperature of about 55°. If the temperature is too low they are almost sure to rot.

Oxalis Ortgiesi may be kept growing all winter; it will flower the year round.

For the winter treatment of *Amaryllis Johnsonii* see pages 22 and 337 of the present volume.

Ivy-leaved Geranium, L'Elegante, requires no treatment particularly different from Zonal Pelargoniums.

Akebia quinata is easily raised from cuttings of the new shoots, or of the roots placed in sand and supplied with a gentle bottom heat.

CALLA FLOWERS.—When the Calla is in flower, or budded, do not change it from one room to another, as a difference in temperature is apt to destroy the bud or flower. Persons in their desire to place flowering Callas in conspicuous places often destroy their beauty.

CORKSCREW BEAN.

MR. JAMES VICK:—I send you by mail a small box containing the flowers of a vine that is known here as the Corkscrew Bean. With us it is killed to the ground in winter, but puts up again in the spring, and makes a very gay covering for an arbor. It is very highly perfumed, which is rather an objection to flowers in a warm climate. The beans are not yet fully matured, when they are so, I will send you one, if you have none. I have never seen it mentioned in your publications, and thought it might be of interest to you if you have never seen it.—Y. O. B., *St. Francisville, La.*

The flowers came safely to hand. They are certainly very remarkable in their appearance, as our readers will agree with us who examine



the illustration here presented. We find them to be the flowers of *Phaseolus Caracalla*, a plant that is a native of the warm regions of South America. At the north it will not bear the exposure to cold in the open ground during winter, but must be lifted and potted in the fall and kept in a dry place of moderate temperature. In spring it can be replanted in the garden. The plant is a rapid grower, and bears in great profusion its purple and white flowers of snail-shell shape.

MADEIRA VINE TUBERS FOR FEEDING.

MR. VICK:—I wish to ask if the Madeira Vine tubers are eatable, if cooked, for any kind of stock or fowl, or are they poisonous and detrimental to the health of any thing that may eat them? I have just taken up and placed in my cellar five bushels of the tubers. I want a peck of them for my own planting in the spring, I have given to my friends until they have more than they want, and what to do with the rest I do not know.—E. A., *Brighton, Ill.*

The Madeira Vine, *Boussingaultia basseloides*, belongs to a family of plants, the properties of which are entirely harmless; two of its members, the Beet and the Spinach, are among our most highly prized table vegetables. Besides these, the same family furnishes the Pig-weed, or Goosefoot, *Chenopodium album*, frequently cooked for greens, and sometimes what is known as the Blite, *Blitum Bonus-Henricus*, is raised for this purpose, but it is inferior either to young Beet-tops or to Spinach. A Peruvian species of *Chenopodium*, *C. Quinoa*, at the time of the conquest by the Spaniards, furnished almost the only farinaceous seed then used by the inhabitants of the high table-lands of the Cordilleras. It is still an article of common diet by the people of that region. This seed is used in soups and is manufactured into a flour from which bread is made. The leaves of this

plant are used as greens, and also furnish fodder for cattle. Many more examples might be given, if necessary, of the healthful uses of different plants of this family, and we know of none of them that are poisonous or deleterious. We should have no hesitation in utilizing, as chicken-feed, or pig-feed, any amount of surplus product of the tubers of the Madeira Vine.

FARFUGIUM GRANDE—DOUBLE PANSIES.

MR. VICK:—Knowing that you are always interested in flowers, I write to ask a question or two, which you can answer in your next MAGAZINE if you wish. We have in our possession a Farfugium just ready to bloom. We always thought they never bloomed. Is it a curiosity?

We have the greatest variety in color and the largest Pansies I ever saw. One or two plants have double flowers. They are a rich bronze-yellow, and purple, some with seven and some with eight petals. Is that uncommon or not?—Mrs. E. H. P., *Louisville, O.*

Farfugium grande is a name in common use for the popular spotted-leaved plant now more correctly known as *Senecio Kämpferi*, a near relative of the Dusty Miller, *Cineraria maritima*, or properly, *Senecio Cineraria*. The



Senecios are well known composite plants with flowers of different colors. The Farfugium has yellow flowers, but it rarely blooms in cultivation. Our enquirer is, therefore, fortunate in having an opportunity to see it in that condition.

Double Pansies are not common; they occasionally appear, and could, no doubt, by proper care be produced very double, but, of course, at the expense of their beauty. Some years ago we knew of one, called Good Gracious, that was propagated and used in the trade for some time, and then discarded.

ANATOMICAL STRUCTURE OF LEAVES.

Dr. R. H. Ward, of Troy, describes a method by which much of the structure of leaves may be preserved. A piece of dry leaf is laid on a thin piece of platinum, or mica, covered with mica or colored glass, and heated on an alcohol lamp until the organic matter is burnt out, and the mineral matter or ash remains. This is dropped on a slide wet with turpentine, and very carefully mounted on soft balsam. The preparations show the construction of the parenchyma, veins, epidermis, stomates, and hairs, with great beauty and distinctness.

A FRAUD.

The advertisement in our November number of City Lots in North Denver, we are informed by a subscriber in Denver, is a "big swindle. The lots are thirty miles from Denver, and the land not worth to exceed \$2 per acre for any purpose." The *Denver Times*, in an article on this subject, says: "This tract is seven miles east of the Platte river, the nearest source of water supply, and among a lot of sand bluffs. Until an extensive system of irrigating canals shall have been built to carry water to it, it is utterly worthless except for grazing purposes to cattle which can get their noses pretty close to the ground, or sheep with unusual powers of endurance. As to its being within view of Denver, by erecting an observatory a thousand feet high on the center of the land and furnishing it with powerful glasses the city of Denver might be seen from that altitude."

The advertisement was sent us by a gentleman whom we know was as much deceived as we were. Our recollection was that North Denver was a populous suburb of Denver, reached by horse-cars; and our opinion was confirmed by a gentleman who spent a portion of the past summer in that city, so we thought the lots worth the trifle asked for them, but it seems that this is not the place. The *Times* describes North Denver about as we supposed it to be. It says: "The only legitimate North Denver is a suburb of this city, largely populated, and cultivated, reached by horse-cars and railway trains, and literally overlooking the city proper. But it is not owned by any land company. The tract represented in the advertisement above alluded to is thirty miles distant and wholly out of the view of the city of Denver, with not more than one human habitation upon it."

AMBER SUGAR CANE.

The results obtained from the Amber Sugar Cane this year appear to be very gratifying in all quarters where it has been raised, and if these results should uniformly follow in future seasons, there is great prospect that immense quantities of sugar will be produced in the middle section of the Western States, and that the incipient Sugar-Beet industry may be forestalled. Mr. A. J. RUSSELL, Vice-President of the Northern Cane Growers' Association, at Crystal Lake, Illinois, writes us as follows:

"We have made 45,000 pounds of excellent sugar from the Amber cane that was very immature, not one-fourth of it being ripe, and the juice only testing $7\frac{1}{2}$ by the gauge. In most other sections it has tested 10 and 11. If we could have had that strength of juice the result

would have been astonishing; but with all the drawbacks we have demonstrated that sugar can be made in paying quantities, on a large scale, from the Amber cane, and have no doubt but the opinion of our Commissioner of Agriculture, Hon. W. G. LE DUC, expressed some time ago, will be verified, and our country will produce all of its own sugar. The cane will mature where corn can be grown successfully. Our season has been the worst we have ever experienced."

WINTER TREATMENT OF CYCLAMEN.

MR. VICK:—Will you please tell me how Cyclamen should be treated? I mean seedlings. Mine always die the first winter after planting. Should they be shaded from the sun? Do they require a dry soil, or the reverse? Any hints in regard to their culture will be thankfully received.—MRS A. C. *New Haven, Ind.*

On page 85 of the present volume pretty full directions were given about rearing plants of *Cyclamen Persicum* from seed, and our correspondent would do well to refer to the remarks made there. In winter, the growing and flowering season of this plant, it should have a full exposure to the light, but from the force of the brightest sunshine should be slightly shaded. It does not require a high temperature, the nearer the heat can be kept to about 50° or 60° the better. A good supply of water is necessary while flowering, but afterwards should be diminished.

The Cyclamen is a plant particularly agreeable to the red-spider, and especially in house-culture, where the tendency is to over-dryness of atmosphere; hence, care must be exercised to guard against this pest, by frequently spraying the foliage with water, or by dipping the plant top downward into a pail of water, so as to wet all the leaf-surface.

ZINNIA SEED.

I have some beautiful Zinnia plants. Will you please inform me if I can ripen the seed in the house, as I am very anxious to save them, and fear they will not ripen before frost?—ADDIE M. L., *Chatham, Mass.*

A Zinnia flower that opens in June will be unfaded and beautiful in September. No flower we are acquainted with maintains its good looks so long. Pick off the oldest and best flowers and dry them in the house. The seed will be found well ripened. In fact, the seed is perfected when gathered, as may be well imagined when we consider how long it has been in growing, and only a little drying is necessary before storing away.

BARTONIA AUREA.—The finest bed of *Bartonia aurea* that we have seen in a score of years, we observed last summer in a little flower garden in the town of Whitby, Ontario. It was a perfect blaze of golden-yellow.



NOTES OF CALIFORNIA INDIANS.

MR. EDITOR:—I am pleased that you take so much pains to interest and instruct the young, and I don't know but older people are just as much interested as their juniors. A correspondent in the July number gave us a very interesting account of some of the birds of California, particularly of the beautiful Mountain and Valley Quails. It was particularly interesting to me because I have seen them a score of times, and can bear testimony to the truth-



ACORN STORE-HOUSE.

fulness of the descriptions and drawings. In a recent number of the *Pacific Rural* I saw an account of the Indians, and as I have seen them in their homes, and observed their customs, and listened to the story of their trials and traditions, the thought occurred to me that I might tell a few things that would be interesting to your youthful readers.

The Indians that are seen about the stopping places on the line of the Pacific railroad seem to be lifeless and harmless, and dirty, mere beggars, but I have seen the warriors and hunters on the plains and the mountains, who exhibited physical strength and bravery. It was in the neighborhood of the Yosemite Valley that I saw most of the customs of the Indians, and conversed with them. Their food

seemed to consist mostly of acorns, and from these they made bread and mush, or gruel.

The bitter of the acorns they filter away by making a depression in the sand in the form of a basin. Into this they put the acorn meal previously pulverized in a mortar, and by pouring water upon it the bitter, or tannin, is entirely washed away. It is then taken up with great care, and very little of it is wasted. At the season when acorns are ripe they are gathered in quantities sufficient for a year's supply, and are stored away in a curious manner, generally in a kind of rude basket, made in trees by interlacing branches, something like wicker-work. These will hold several bushels, and are covered with bark and grass. Placing these store-houses in trees is to save them from the depredations of wild animals. I send you a



DESCENDING THE MOUNTAINS.

drawing of one of these singular receptacles, which I sketched while resting from a long walk on the banks of the Merced river.

They have a curious tradition about this river, that once when they had offended the Great Spirit and he withheld the rain, causing great suffering, a beautiful goddess took pity upon their sad condition and sent this river flowing through the valley, which brought to them life and health, and so it was called the Merced river, or River of Mercy, a name which it still retains.

Some of the Indian tribes in the vicinity of Yosemite Valley burn their dead. When all is prepared and the body laid upon the pile, the nearest relative applies the fire. They think



INDIANS PREPARING FOOD FROM ACORNS.

the spirit remains in the heart, which is its home until it is reached by the fire, when it escapes. Both the good spirit and the bad spirit are watching to carry off the Indian's soul when it is freed from the body. The bad spirit cannot be very smart, for they think they can deceive him. So they dress in the worst possible costume, paint in a fearful manner, act as if drunk and angry with each other, and, with sticks or guns, have a sham fight with pretentious murderous designs, and while the bad spirit is enjoying the row with the greatest delight, his attention being attracted from the burning body, the spirit of the dead Indian escapes, and is carried away by the good spirit, who is attending to his business, and the bad spirit is completely outwitted.

What a pity it is that these poor Indians have not learned that a happy hereafter is not left thus to chance, but is made sure by a good life.

Traveling up and down the mountains on the little Californian horses, called mustangs, is real fun, and I think the boys would enjoy it. The mustang is a sure-footed little animal, and will travel the mountain roads with perfect safety to himself and rider. Occasionally one is said to be vicious, and will buck his rider off his back

pretty frequently, but I never saw anything of the kind, and think the mountain horses must have been selected for their docility. They have a very easy gait, which is called a lope, something of a canter, but easier than anything I have ever experienced this side of the Rocky mountains. I have often wished for a mustang since my return from California.—PACIFIC TRAVELER.

OAK APPLES.

MR. EDITOR:—I have several nephews, who live in the country and know a good deal about the woods and the nature of trees, and perhaps quite as much about coons and woodchucks and the like. Indeed, they have attempted to enlighten me on the habits of these and other animals, like the squirrels, field mice, etc., showing that they do not go around with their eyes closed, though sometimes they do arrive at conclusions rather too rapidly. Some things, however, puzzle them, and I am occasionally called upon to solve some mystery. The last application was to ac-

count for the little apple-like objects that had appeared on the branches of some Oak trees, when there had been no blossom, and, of course, should have been no fruit. Every one knows that the fruit of the Oak tree is an acorn, and not anything like an apple. I will give a drawing of these Oak-apples, as they are called. I suppose your readers have heard of nutgalls, sold by druggists. When put in water they give it a black color, and in this way are used for dyeing and making ink. These are made by the sting of an insect, or, rather, and insect lays its eggs just under the bark, when this remarkable swelling occurs. This apple on our Oaks is formed in the same manner. The insect is called the Gall Insect, an *Hymenoptera*. When a boy, I searched many a day for Oak apples, and the boy who could get one to wear in his cap on Oak-apple day felt quite proud, and looked down upon the poor fellows



who could only sport a leaf or two. When King Charles was driven from his throne, history tells that he safely hid from his enemies in an Oak tree, on the 29th of May, and that day is held in remembrance by the wearing of Oak leaves, and, if possible, Oak apples in the hat.

They have also asked me some questions about the Sparrow, and as they read your MAGAZINE, perhaps I had better tell my story to a great many boys instead of two. If you think so, I will have something to say in the next number.—AN OLD BOY.

BOTANY FOR LITTLE FOLKS.

In the whole vegetable kingdom there is probably no order so rich in handsome plants and beautiful flowers as that of the Heathworts. The Heath, or Heather, as a wild plant, is scarcely known in this country, yet this interesting family is well represented by other members, and some of them are of rare beauty. In England and Scotland and most other countries of Europe, no plant is more common than the Heath; its botanical name is *Erica*, and the name of the order is *Ericaceæ*, meaning, plants like the *Erica*. The flower of the Heath is small, but, in most species, of an elegant form and usually beautifully colored. The plants are low-growing, shrubby, and with small, nar-



Fig. 1. Heath, *Erica*.

row leaves; the sketch, *fig. 1*, of piece of branch with flowers gives a fair idea of the peculiar appearance of these plants. The flowers are clustered on the ends of the branches and branchlets. The calyx is quite small and four-parted. The corolla is tubular, with a four-parted limb and variously colored in the different species, being white and rose, or pink and often shades of purple. The stamens are eight, or twice the number of the divisions of the corolla. A section of a flower enlarged is

shown at *fig. 2*; the calyx, the corolla and the stamens are inserted upon the receptacle in rows, one above the other, and all below the ovary. The ovary is superior. A peculiarity

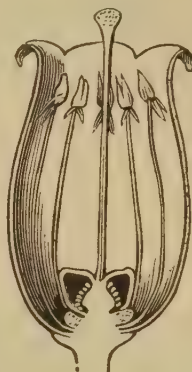


Fig. 2. *Erica*. Section of Flower Enlarged.



Fig. 3. Stamens and Pistil.

of the stamens is a little appendage attached to each lobe of the anther. The two-lobed anther is fixed at its base to the filament, and the appendages project downwards below it. The eight stamens fixed below the ovary and the pistil are shown at *fig. 3*.

A transverse section of the ovary, represented at *fig. 4*, shows it to be divided into four cells, each of which is many-seeded. A correct diagram of the flower is presented at *fig. 5*, and will be comprehended without further explanation, showing as it does the relative positions of the parts of the calyx and corolla, the stamens and the ovary.

The *Erica*, or Heath, is a typical plant of the family, and the essential peculiarities, exhibited in the examination now made, pertain to the different members of the family; for instance, the corolla is monopetalous, but there are some genera in which the divisions are so deep that it is almost polypetalous. In some cases the divisions of the calyx and corolla are five instead of four, and the ovary is five-celled and the number of stamens is ten. Other varieties from the typical form might be noticed, but these will present themselves to the student when the various specimens come under his observation.

The Scotch Heath, *Erica cinerea*, has been found on Nantucket Island, and is supposed to be a native of that locality, although that is not beyond doubt; the English Heather, *Calluna vulgaris*, grows on low land near Tewksbury, Massachusetts, and, with these exceptions, it may be said that the Heath is not found in a wild state in this country. In Europe it occupies vast tracts with a few other plants, such as Furze, Broom, Juniper, Ferns, Grasses, Rushes, &c. Sheep and cattle browse upon the young shoots of the Heath, and in some sections of

Scotland and England it forms almost exclusively their pasture. The heath-moors are the resort of great quantities of birds that find the shelter of the stubble a suitable cover and protection from the sportsman's art. The Moor-



Fig. 4. Cross-section found the different kinds of Ovary.

fowl is the most valuable of these birds, and is sought after in Great Britain with as much zest as the Partridge and the Prairie-chicken is here.

In the order Ericaceæ are the Huckleberry, *Gaylussacia*, and the Blueberries, *Vaccinium*, and the Cranberries, *Oxycoccus*; here, also, we find the Wintergreen, *Gaultheria*, and that handsome little trailing evergreen plant, the Bear-berry, *Arctostaphylos*. In this family, too, is the May flower, or Trailing Arbutus, *Epigæa repens*, so universally admired and so dilligently sought after in the early spring for its deliciously fragrant and beautiful blossoms. All these that we have named are well known to grow wild in almost all parts of the country and are more or less familiar to us all.

One of the most widely distributed plants of this family is the American Laurel, or *Kalmia*; there are several species of it and they are found in certain localities from Maine to Florida, and extending into the center of the country as far west as Ohio and Kentucky. The finest species is *K. latifolia*, often known as Calico-bush and Spoon-wood. This is a beautiful evergreen shrub, growing five feet high and upwards, and in the most favorable locations even attaining a height of twenty feet. It is also called Wood Laurel, from the fact that it is often found in the edges of the woods, where it thrives under the shelter of the trees;



Fig. 5. Diagram of Heath shrubs in full bloom; Flower.

but on mountain sides and in ravines it grows fully exposed, except having the natural shelter afforded by such locations. It is impossible to describe the beauty of a mass of these each individual flower is a gem on account of its beautiful and peculiar structure and its delicate tintings of white, pink and rose, and the amount of bloom is so great as almost to cover the plants. It is one of the most desirable shrubs to grow wherever a locality is suited to it, but, unfortunately, in many sections it will not thrive, even with suitable shelter, on account of too great an amount of lime in the soil; it grows naturally

only where the water of the springs and streams is soft. These remarks about soil apply as well to most of the members of the Heath family, and the difficulty may be obviated to some extent by the preparation of beds with an artificial mixture of soil; one part of leaf-mold, one part of peat, and this will be best if derived from a non-limestone region, and one part of sand, well mixed together, forms a soil in which they delight. In such a soil as here described may be grown not only the *Kalmia*, but several kinds of *Andromeda* and *Ledum*, very pretty evergreen shrubs, and especially the hardy kinds of *Azalea* and *Rhododendron*. Although the *Azalea* is not now considered distinct from the *Rhododendron* in proper botanical classification, still, as florists continue to make a distinction in trade, it is convenient so to allude to them.

Rhododendron Catawbiense is a native of North Carolina, and from this species has been



Fig. 6. *Rhododendron*.

derived a great number of beautiful varieties ordinarily hardy in most parts of this country. The greatest difficulty, in raising them in the open ground, is to shelter them from the action of the bright sun in winter, especially when the temperature is very low; this occurrence is very common in the winter in most parts of the country, and necessitates a resort to some kind of protection; a light covering of evergreen boughs is probably the best. A shelter from sweeping winds by a hedge or screen of trees is also desirable. Some locations on hill-sides facing north, or northeast, are found to be very happily suited to them. Nothing can be more satisfactory than these beautiful shrubs where they can be successfully raised. Some

cultivators devote much attention to them and provide large houses that are entirely occupied by them. *R. ponticum* is a species found in the Himalaya mountains, in Asia, and from this, by cultivation, have been produced almost numberless varieties of dazzling beauty—but these are tender and their cultivation in the open ground in this country should not be attempted.

The Heath, or Erica, as a cultivated plant, commands great attention, especially in Europe. The Cape of Good Hope and Southern Africa furnish very many species of Heath, and from these a great number of beautiful varieties have been derived and are cultivated with great care. Almost fifty years ago Loudon, the celebrated horticulturist and botanist wrote as follows: "Of what other genus can it be said that every species, without exception, is beautiful all the year, and at every period of the year, in flower or out of flower, and of every size and age? Suppose an individual had the penance imposed upon him of being forbidden to cultivate more than one genus of ornamental plants, is there a genus that he could make choice of at all to be compared to Erica—perpetually green, perpetually in flower, of all colors, of all sizes, and of many shapes?"

Since Loudon's time many new species of Cape Heaths have been found, and very many beautiful kinds have been raised from seed.

PREMIUMS.

Some of our friends have suggested that we offer premiums for obtaining subscribers. As a slight compensation to those who labor among their neighbors in getting up clubs, we propose to give one of our FLORAL CHROMOS, on paper, to every one who sends us a club of *Five Subscribers*; and for *Twelve Subscribers* one of our CHROMOS ON CLOTH AND STRETCHER, both sent postage free. To any person sending us *Twenty Subscribers* we will forward by express, expressage paid by us, one of our FLORAL CHROMOS NICELY FRAMED IN WALNUT AND GILT. All to be at club rates—\$1 each.

We hope our friends will commence to work early and in earnest. Were all to do what some have done, we should have a hundred thousand subscribers by the first of January.

SEND IN NAMES EARLY.

It will be a great convenience if our subscribers will renew their subscriptions and send in their clubs early. It will aid us very much in arranging our books, save a liability to mistakes, and enable us to send the January number so that you will have it to read Christmas Day, or at least can look at the pictures, if you are too happy to read.

OUR MAGAZINE FOR 1880.

This number completes the present year. We shall try to make it better than ever next year. Many subscribers would do us and their neighbors a favor by getting up a club. There are few places where a club of five could not be obtained. Then the MAGAZINE costs only a dollar each, and twelve numbers and twelve colored plates are a good deal for a dollar. Then, in addition, we make the getter up of the club a present of one of our beautiful Floral Chromos.

BINDING THE MAGAZINE.

We will bind the MAGAZINE for any subscriber for 50 cents, and return the book with the postage or express charges paid by us.

Our colored plates are so handsome that some are tempted to take them out for framing. We will send extra colored plates to any of our subscribers for FIVE CENTS each.

EXTRA COPIES.

Many persons would like occasionally to send some number of the MAGAZINE to a friend, on account of some article or illustration, but dislike to lose a number from their volume. To our subscribers we will send extra copies for ten cents each, or will mail them to any address desired.

A GARDEN BOOK.

Besides this MAGAZINE we publish VICK'S FLOWER AND VEGETABLE GARDEN, an elegant work, with numerous illustrations and six beautiful colored plates—five of flowers and one of vegetables. It is a book of 170 pages. Price, 50 cents in paper covers, \$1 bound in cloth.

FLORAL GUIDE.

The FLORAL GUIDE for 1880 will be ready to send out early in December. It will be very handsome—100 pages, 500 illustrations and an elegant colored plate. To all of our customers it will be sent free, and to any one else for FIVE CENTS—about the cost of postage.

BOUND VOLUMES OF THE MAGAZINE.

The Bound Volumes of our MAGAZINE will make a very fine Christmas present. We can furnish copies of 1878 and 1879 bound for \$1.75 each, postage prepaid. We shall have bound copies of 1879 by the 10th of December.

LOST NUMBERS.

If a number has failed to reach you during the year, and your volume is thus incomplete, send us a postal card stating what number you want. It will cost you only a penny, and we will mail you the number at once.

